

JESSE CHIEH CHEN

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RESEARCH INTEREST

Spatial Econometrics, Social Networks, Bayesian Statistical Modelling.

EDUCATION

National Taiwan University, Taipei, Taiwan

September 2022 — Present

Master in Economics

- GPA: 4.27/4.3
- CLASS RANK: 1/45
- GRADUATE LEVEL COURSES: Microeconomic Theory, Macroeconomic Theory, Empirical Game Theory Analysis, Computational Methods for Econometrics, Economic Analysis of Social Networks
- EXPECTED TIME OF GRADUATION: June 2024

National Taiwan University, Taipei, Taiwan

September 2018 — June 2022

Bachelor of Arts in Economics (Specialization in Mathematical Economics)

with Minor in Mathematics

- GPA: 4.08/4.3
- CLASS RANK: 12/144 (four times dean's list award)
- ECON GRADUATE LEVEL COURSES: Econometric Theory, Machine Learning and Causal Inference, Data Science and Social Inquiry, Econometric Analysis of Macroeconomic Time Series, Introduction to Quantitative Methods
- MATH COURSE: Advanced Statistical Inference, Big Data Applications and Theories, Introduction to Mathematical Analysis, Linear Algebra, Introduction to Probability Theory

THESIS

“A Bayesian Approach to the Problem of Unknown Network” (MA, working in progress)

Advisor: Prof. Hon-Ho Kwok

May 2023 — Present

- Proposed a Bayesian estimation process with economic interpretation on spatial autoregressive models with unknown networks.
- Performed numerical simulation (MCMC) to evaluate the effectiveness of the approach in a simplified setting.

“Generalized Nonlinear Least Square for Spatial Autoregressive Model” (BA)

Advisor: Prof. Hon-Ho Kwok

October 2021 — June 2022

- Derived asymptotic properties of the GNLS (generalized nonlinear least square) estimator for cross-sectional spatial autoregressive models.
- Performed numerical simulation (numerical optimization) to evaluate the GNLS estimator.
- Concluded that GNLS estimator is asymptotically as efficient as the best instrument variable approach.

RESEARCH EXPERIENCE

Identification and Estimation of Social Interactions Models with Unknown Networks

Research Assistant to Prof. Hon-Ho Kwok

July 2021 — Present

- Implemented and developed a least squares type estimator in Matlab to estimate unknown matrices/network that is easily extendable to common high dimensional methods.
- Discussed and developed model averaging methods for spatial economic models.
- Created and compiled lecture notes for graduate level course *Causal Inference and Prediction in Econometrics*.

Estimating Intergenerational Health Transmission in Taiwan with Administrative Health Records

Research Assistant to Prof. Ming-Jen Lin and Doctoral Candidate Harrison Chang January 2021 — July 2023

- Merged and processed 20 years of population household registry, medical records and health insurance data in Taiwan (2.25 TB of raw data) in R.
- Constructed family trees and classified populations characteristics, e.g., malady categories, social-economical strata, occupation types, marital statuses.
- Performed statistical tests and improved inference workflow in Stata and R.

RESEARCH PROJECT AND TERM PAPER

Inquiry into Fertility Rate in Taiwan

April 2021 — June 2021

- Obtained and processed five years marital and child birth data in Taiwan.
- Performed statistical tests and estimated fertility rates in each social-economic strata.
- Concluded that low fertility rate in Taiwan is linked directly to low rate of marriage.

Taiwan on Twitter: Analysis of Taiwan Related Tweets on Twitter

October 2020 — February 2021

- Parse two months of tweets and identify KOL of Taiwan-related topics on Twitter.
- Apply natural language processing on tweets and classify sentiments in comments using `jiebaR` and `sentimentr` in R.

OTHER ACHIEVEMENTS AND EXPERIENCES

- **Workshop “Tools not Taught”** June 2023
 - Initiated a workshop *Tools not Taught* with a friend for first or second year econ students.
 - The workshop provided introduction to \LaTeX and R. I am responsible for the R part.
- **Private Tutor for Microeconomics Theory (Graduate Level)** Oct 2022 — Dec 2022
Privately tutored a Ph.D. student in microeconomics theory: utility/preference theory ([notes](#)) and game theory ([notes](#)).
- **Internship at Numeracy Lab** March 2021 — July 2021
 - Numeracy Lab is a Taiwanese firm devoted to popularizing maths education. I developed and refined ideas as an intern, culminating in the creations of two writings of popular maths: [Fair Division: The Thousand-Year Puzzle of Talmud](#) and [Can you beat the Oxford Entrance Exam?](#) (both in Mandarin).
- **Internship at Chung-Hua Institute of Economic Research (CIER)** July 2020 — December 2020
 - Translated, edited, and designed technical reports for [Link and Loop initiative](#).
 - Visualized data and edited for [RE100 renewable energy market report for Taiwan](#).
- **Member of Student Association, Ministry of Student Welfare** September 2018 — September 2019
- **Exchange student to the University of Edinburgh, Scotland, UK in 2020** (Suspended due to Covid19)

SKILLS

- Programming: R, C++ (for usage via R), Bash, Matlab, Python, Stata, \LaTeX .
- Languages: English (Fluent), German (B2, upper intermediate), Mandarin (Native).